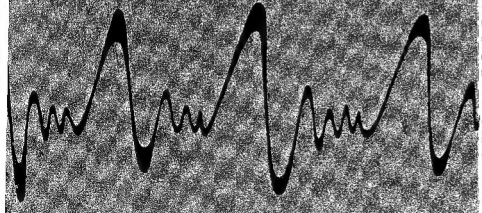
Studio RPC 500 c

Bedienungsanleitung
Operating Instructions
Mode d'emploi
Istruzioni per l'uso

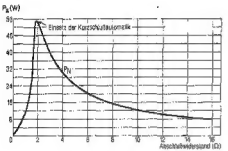
Super HiFi



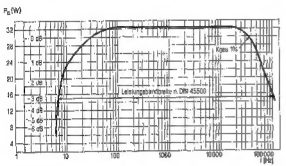
GRUNDIG

Diagramme
(die Kurven zeigen den typischen Verlauf)

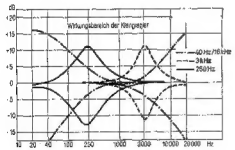
Typical Curves
Courbes typiques
Curve caratteristiche



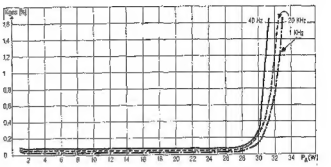
A) Ausgangsleistung bei 1 kHz über Ra.
Nur 1 Kanal ausgesteuert



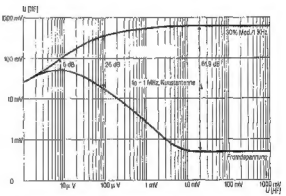
C) Leistungsbandbreite



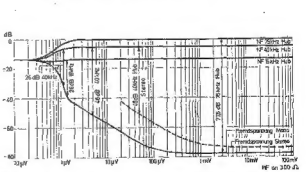
E) Wirkung des Klang-Registers



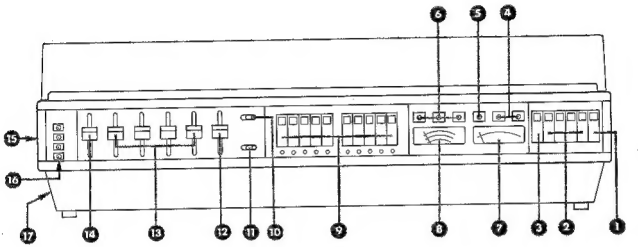
B) Klirrfaktor bei verschiedenen Frequenzen,
(Zweikanalaussteuerung, Ra = 4 Ω, Meßeingang TB)

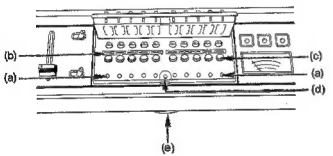


D) AM-Signal- und Fremdspannungsverlauf
in Abhängigkeit von der Antennenspannung



F) FM-Signal- und Fremdspannungsverlauf
in Abhängigkeit von der Antennenspannung



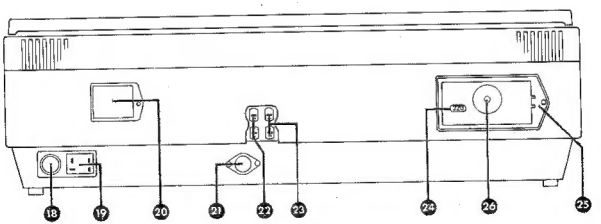


Öffnen der **Tastenklappe** nach kräftigem Druck auf den Schnappverschluß (e) an der Unterkante

To open the flap, push the spring catch (e) mounted on the lower edge firmly upwards.

Pour ouvrir le couvercle, appuyer fermement sur le verrou de l'arrête inférieure (e)

Con tastiera sollevata (dopo aver premuto con forza sull'angolo inferiore della chiusura a scatto (e)).



❶ **Ein/Ausschalter** (übergeordneter Netzschalter für das gesamte Studiogerät)

❷ **Wahltasten für Betriebsarten**
RF = Rundfunk
CASS = Wiedergabe vom eingebauten Cassetten-Recorder
TA = Platten-Wiedergabe mit eingeb. Plattenspieler
TB = Wiedergabe mit externem Tonband- oder Cassettengerät

❸ **MPX AUS-Taste** hebt Stereo-Empfangsbereitschaft auf (UKW-Empfang dann nur in Mono)

❹ **Leuchtanzeigen**
MPX für Stereo-Empfang (Multiplex)
NF für Platten-, Band- oder Cassetten-Wiedergabe (leuchtet auch bei Mono-Aufnahmen, da diese über beide Kanäle parallel laufen)

❺ **AFC-Anzeige** (für UKW-Scharfabstimmung)

❻ **Leuchtanzeigen für Wellenbereichswahl**
LW = Langwelle
MW = Mittelwelle
UKW = Ultrakurzwelle

❼ **Abstimm-Instrument** (Feldstärke-Instrument bei UKW-Empfang)

❽ **Instrument für Frequenzabstimmung**

❾ **Senderwahl-Tasten**

(a) **Tastknöpfe der Senderwahltasten**

(b) **Schalthebel für Wellenbereiche**

(c) **Rändelknöpfe für Senderabstimmung (ausziehbar)**

(d) **Tastknopf für UKW-Scharfabstimmung (AFC)**

❿ **Linear/Contour-Schalter**

⓫ **Schalter für Rauschfilter**

⓬ **Lautstärke**

⓭ **Klangregister**

⓮ **Stereo-Balance**

⓯ **Umschalter für Lautsprecher/ Kopfhörer-Betrieb**

⓰ **Leuchtanzeigen für Lautsprecher/ Kopfhörer-Betrieb**

⓱ **Kopfhörer-Anschlüsse**

⓲ **Tonbandbuchse** (Universal-Anschluß)

⓳ **Antennen-Anschlüsse**
⏚ für AM-Antenne (LW, MW)
⏚ für Erde
⊓⊓ für UKW-Dipol (300 Ω)

⓴ **Abschraubbare Abdeckung** für Spannungswähler des Cassetten-Recorders

㉑ **Anschluß für Antennenrotor-Bediengerät**

㉒ **Anschlüsse für Lautsprechergruppe 2**

㉓ **Anschlüsse für Lautsprechergruppe 1** (L = Linker Kanal; R = Rechter Kanal)

㉔ **Netzspannungsanzeige** für Rundfunk/ Verstärkerteil

㉕ **Hier zum Herausdrücken der Abdeckung kleinen Schraubenzieher ansetzen; zuerst Netzstecker ziehen und Schraube lösen**

㉖ **Aufbewahrungsmöglichkeit für Zentrierstück** (45er-Schallplatten)

Für den eingebauten Plattenspieler und Cassetten-Recorder liegen gesonderte Bedienungsanleitungen bei.

Ihr wertvolles Gerät darf sicher die gleiche sorgfältige Behandlung beanspruchen, die Sie auch Ihren Möbeln angedeihen lassen: **Große Hitze oder Feuchtigkeit vermeiden!** Beachten Sie auch die Aufschriften am Gehäuseboden.

Gehäuse nur mit weichem, staubbindendem Lappen reinigen. Keine scharfen Poliер- oder Reinigungsmittel verwenden.

Die Deutsche Bundespost macht darauf aufmerksam, daß die „Allgemeine Ton- und Fernseh-Rundfunkgenehmigung" nur zum Errichten und Betreiben von Ton- bzw. Fernseh-Rundfunkempfängern berechtigt. Es dürfen damit nur Sendungen des Rundfunks empfangen werden, andere Sendungen dagegen nicht.

Technische Daten für Empfangsteil (HF)

Empfangsbereiche
UKW 87,5 ... 108 MHz
Mittelwelle 510 ... 1620 kHz
Langwelle 145 ... 350 kHz

Empfindlichkeiten
FM: 1,4 µV an 300 Ω (entspricht 0,7 µV an 75 Ω) für 18 kHz Hub und 26 dB Rauschabstand
AM: Mittelwelle 8 ... 12 µV $\frac{R + S}{R}$ = 6 dB, m = 30 %
Langwelle 13,5 ... 22 µV

Antennen-Anschlüsse
FM: UKW-Dipol 300 Ω
AM: Außenantenne und Erde

Zwischenfrequenzen
FM: 10,7 MHz - AM: 460 kHz

FM-Begrenzung
Begrenzungs-Einsatz
(–1/–3 dB): 1,2/6,9 µV
an 300 Ω

Bandbreite
FM – ZF: ca. 180 kHz
AM – ZF: ca. 4,6 kHz
FM-Demodulator: 800 kHz

ZF-Festigkeit
FM: ≧ 80 dB
AM: ≧ 60 dB

AM-Unterdrückung
≧ 50 dB bei 1 kHz, gemessen bei 22,5 kHz Hub, 30 % Modulation und 1 mV an 300 Ω.

Spiegelselektion
FM: ≧ 67 dB
AM: Langwelle 69 ... 66 dB
Mittelwelle 46 ... 60 dB

Automatische UKW-Scharfabstimmung (AFC)
Abschaltbar, Halte-/Fangbereich ± 400 / 280 kHz

Capture Ratio (Gleichwellen-Selektion)
≦ 1 dB für – 30 dB Störung bei 1 mV an 300 Ω und 40 kHz Hub.

FM-Fremdspannungsabstand
nach DIN 45405 im Bereich 31,5 Hz ... 15000 Hz gemessen (Hub 40 kHz), für 30 Watt Nennleistung
Mono/Stereo: ≧ 65/60 dB;
für 50 mW Mono/Stereo: ≧ 62/57 dB.

FM-Geräuschspannungsabstand
nach DIN 45405 im Bereich 31,5 Hz ... 15000 Hz gemessen (Hub 40 kHz),
für 30 Watt Nennleistung
Mono/Stereo: ≧ 66/66 dB;
für 50 mW
Mono/Stereo: ≧ 62/66 dB.

Übertragungsbereich bei FM-Stereo
Besser als DIN 45500, von Antenne bis Lautsprecher-Ausgang.
40 ... 6 300 Hz ≦ ± 1,5 dB
6300 ... 15 000 Hz ≦ ± 3 dB

Pilotton-Fremdspannungsabstand
≧ 55 dB bei 19 kHz
≧ 60 dB bei 38 kHz

Klirrfaktor
Mono/Stereo: ≦ 0,5 % bei 1 kHz und 40 kHz Hub, gemessen bei 2 x 25 W an 4 Ω

Stereo-Decoder
Pilotton-gesteuerter PLL-Stereo-Automatic-Decoder in IC-Technik (Umschalt-Pegel ca. 28 µV an 300 Ω)

Stereo-Übersprechdämpfung
1 mV Antennenspannung, 47,5 kHz Gesamthub
1 kHz ≧ 40 dB
250 ... 6 300 Hz ≧ 35 dB
6300 ... 10 000 Hz ≧ 35 dB
selektiv gemessen

Störstrahlungssicherheit
Nach allen europäischen Normen und IEC-Empfehlungen störstrahlungssicher.

FTZ-Nr. U 101

Deemphasis
50µs sec. nach Norm.

Technische Daten für Verstärkerteil (NF)

Ausgangsleistungen
gemessen nach DIN 45 500, an 4 Ω
Abschlußwiderstand

Nur Lautsprechergruppe 1 oder 2:
100 Watt Musikleistung = 2 x 50 Watt
50 Watt Nennleistung = 2 x 30 Watt
Lautsprechergruppe 1 + 2:
120 Watt Musikleistung = 4 x 30 Watt
40 Watt Nennleistung = 4 x 10 Watt

Klirrfaktor
≦ 0,3 % bei 2 x 25 W Sinus im Frequenzbereich 40 ... 20 000 Hz

Übertragungsbereich
20 ... 20 000 Hz ± 1,5 dB bei TB,
40 ... 20 000 Hz ± 2 dB bei TA-Magnet

Leistungsbandbreite
< 10 ... > 30 000 Hz bei 1 % Klirrfaktor (nach DIN 45 500).

Intermodulation
≦ 0,3 % bei Vollaussteuerung, gemessen mit einem Frequenzgemisch von 250 und 8000 Hz im Verhältnis von 4 : 1 (nach DIN 45 403).

Fremdspannungsabstand
(nach DIN 45 405) für 30 W/50 mW
TB: ≧ 85/80 dB (UE = 500 mV)
TA: ≧ 66/59 dB (UE = 5 mV)

Obersprechdämpfung
≧ 40 dB im Bereich 40 ... 20 000 Hz
≧ 62 dB bei 1000 Hz

Eingangsempfindlichkeiten und Widerstände
bezogen auf 30 Watt Nennleistung
TA: 1,6 mV / 47 kΩ
TB: 130 mV / ≧ 0,5 MΩ.
Der Tonabnehmereingang ist mit einem Entzerrer-Vorverstärker ausgerüstet. Entzerrung 3180–318–75 µsec.

Maximale Eingangsspannungen
TA ≧ 42 mV,
TB ≧ 3,5 V.

Lautstärkesteller
Gleichlaufabweichungen nicht größer als 2 dB im Frequenzbereich 20 ... 20 000 Hz. Durch die physiologische Lautstärkeveränderung wird der Frequenzgang dem Hörempfinden bei der jeweils eingestellten Lautstärke angepaßt.

Klangregister
Stellbereiche:
Bässe (40 Hz) ± 15 dB
Tiefen (250 Hz) ± 10 dB
Mitten (3 kHz) ± 10 dB
Höhen (16 kHz) ± 13,5 dB

Stereo-Balance
Stellumfang – 12 dB

Rauschfilter
fg (–3 dB): 7 kHz

Ausgänge
a) 4 Lautsprecherbuchsen nach DIN 41529 (Nennabschlußwiderstand 4 Ω, min. 3,2 Ω) auch für Stereofonie in zwei getrennten Räumen.

Es können auch Lautsprecher mit größerer Impedanz (bis 16 Ω) bei entsprechend geringerer Ausgangsleistung angeschlossen werden. Die Lautsprecher-Ausgänge sind durch automatische Kurzschlußsicherungen geschützt. Mindestwert, bei dem die elektronischen Sicherungen ansprechen können: ≦ 2 Ω
b) 2 Buchsen nach DIN 45 327 zum Anschluß von 2 Stereo-Kopfhörern. Anschließer sind Kopfhörer mit Impedanzen von 5 bis 2000 Ω.

Dämpfungsfaktor
Infolge des sehr kleinen Innenwiderstandes von 0,17 Ω ergibt sich bei 4 Ω Belastungswiderstand ein Dämpfungsfaktor von 23,5 was 27 dB entspricht. Damit ist eine sehr hohe elektrische Bedämpfung des Lautsprechers gegen unerwünschte Ausklingvorgänge sichergestellt.

Allgemeine technische Angaben

Überlastungsschutz
Die elektronische Automatik schaltet in allen Fällen von Überlastungen, also nicht nur bei Kurzschlüssen, den jeweils gestörten Kanal ab. Auch kapazitive oder induktive Überlast wird von der Automatik sicher „erkannt". Die Endtransistoren sind damit sicher vor Zerstörung geschützt. Zusätzlich sind 2 Übertemperaturschalter an der Kühlschiene und am Netztransformator eingebaut, die bei Erreichen einer bestimmten Grenztemperatur des Gerät ausschalten. In beiden Fällen wird nach Beendigung der auslösenden Störung selbsttätig wieder eingeschaltet.

Stromversorgung
Für Netze von 110, 130, 220, 240 Volt ~ 50/60 Hz.
Leistungsaufnahme max. ca. 185 Watt + 1,2 W (Plattenspieler) + 12 W (Reorder): bei TA ohne Signal: 22 Watt + 1,2 Watt (Plattenspieler) + 12 W (Reorder)

Sicherungen
Netz (Si 1): 110/130 V ~: T 2 A
220/240 V ~: T 1 A
Sekundär: 2 x T 6,3 A
T 200 mA
T 400 mA
T 50 mA
T 1 A

Änderungen vorbehalten!

Operating Instructions

❶ On / off push button
(mains switch for the complete unit).

❷ Press buttons:
RF = Radio
CASS = Replay from built-in cassette deck
TA = Replay from built-in record deck
TB = Replay from external tape or cassette recorder

❸ MPX off press button
Switches off the stereo decoder (all FM (VHF) programmes received will be in mono)

❹ MPX and NF (AF) indicators
MPX for stereo radio
NF for records, tape or cassette replay (also lights up with mono recordings, as these are replayed through both channels).

❺ AFC indicator
(AFC automatically maintains the correct tuning point on VHF (FM)).

❻ Waveband indicators
LW = Long wave
MW = Medium wave
UKW = VHF (FM)

❼ Field strength meter on FM (VHF) – Tuning meter on AM

❽ Frequency meter

❾ Press buttons for preset FM (VHF) programmes

a) contact buttons at FM preset keys

b) waveband selectors

c) tuning knobs

d) AFC contact button

❿ Linear/Contour switch (loudness control)

⓫ Low pass filter switch

⓬ Volume control

⓭ Tone controls

⓮ Stereo-balance control

⓯ Loudspeaker/Headphones switch

⓰ Loudspeaker/Headphones indicator

⓱ Headphone sockets

⓲ Tape socket (5 Pin DIN)

⓳ Aerial sockets:
Y for AM aerial (LW, MW)
⏚ for earth
⊓ for FM dipole (300 Ω)

⓴ Cover for the cassette recorder voltage selector

㉑ Socket for VHF (FM) aerial rotator (special accessory)

㉒ Loudspeaker sockets – 2

㉓ Loudspeaker sockets – 1
(L = left channel; R = right channel)

㉔ Mains voltage setting indicator for tuner amplifier

㉕ Cover plate release slot (disconnect the unit from the mains, loosen the screw and use a small screwdriver to press out the cover).

㉖ Possibility for storing a 45-rpm spindle adaptor (45-rpm records)

Be sure to read the separate instruction books supplied for the built-in record player and cassette recorder before using the RPC 500.

The case of the unit should be treated as a piece of furniture. The unit should not be subjected to high temperatures or high humidity and should only be cleaned with a soft cloth (preferably anti-static). Never use abrasive polishes or cleaning agents as the surface will almost certainly be damaged. Please also note the inscriptions at the bottom of the case!

The German Federal Postal Authorities draw your attention to the fact that the "General Sound and TV-Radio Licence" entitles you only to install and to operate sound, TV and radio receivers. Only radio transmissions and no other kind of transmissions may be received by means of these sets.

Mains Connection
The mains voltage to which the unit has been adjusted is indicated in the window ㉔.

If necessary the mains voltage setting can be changed by inserting a coin in the voltage selector slot and turning the selector to the required position (110, 130, 220, 240 V, AC). To gain access to the voltage selector the cover plate must be removed. Completely disconnect the unit from the mains supply by pulling out the mains plug. Remove the fixing screw with the aid of a small screwdriver and press out the cover in the place indicated by ㉕.
When the voltage is changed it may be necessary to change the mains fuse (fuse "T"). For voltages between 110 and 130 V use a T 2 amp fuse (T = anti-surge). For voltages between 220 and 240 V use a T 1 amp fuse. Under no circumstances should the fuse be repaired or replaced with a fuse of a higher rating. The built-in cassette recorder has its own mains voltage selector which must be adjusted separately. The transparent cover ⓴ must be removed for access. For details of how to change the voltage selector setting consult the cassette recorder instruction book and the instructions on the case of the RPC 500.

Important Note
For safety reasons unplug the appliance from the mains before gaining access to the voltage selectors or fuses. If in doubt please consult your dealer.

Additional information for sets sold in Great Britain
The set is factory-preset to operate from a mains supply of 240 V AC. Your dealer will install your set for you and ensure that your local electricity supply is suitable and no further adjustments should be necessary. We recommend that a 13 amp 3-pin plug be used, fitted with a 2 amp fuse. The brown lead should be connected to the live pin (marked L or red or brown) and the blue lead must be connected to the neutral pin (marked N or black or blue). On no account should either of the wires be connected to the earth pin (marked E or green/yellow). If other mains plugs are used please ensure that they are protected with a 5 amp fuse.
We recommend that the set be disconnected from the mains when not in use for long periods.

Aerials
In primary service areas good results can be obtained on FM with a simple room dipole eg: GRUNDIG FM strip dipole. For the best possible results we recommend the use of an outside FM dipole especially when receiving stereo broadcasts. Remember 10 times as much aerial signal is required when receiving a stereo transmission. Even an outside FM dipole may not be suitable in mountainous regions or for long distance reception unless it is mounted as high as possible above the roof of the house.

On the back of the unit there are four flat sockets for aerials and earth ⓫. The two sockets on the right are for connecting a 300 Ω FM dipole. When an outside FM dipole is used AM (LW, MW) reception may also be improved because the AM and FM aerial sockets are connected together via a shorting link mounted between the two sockets.

If separate outside aerials for FM and MW/LW or a communal aerial system is being used, the shorting link must be removed otherwise inter-action between the two aerials will occur.

If you are not sure of the signal conditions in your area, and remember that a good signal is essential for optimum stereo reception, we suggest you contact your dealer who will be pleased to advise you as he will be familiar with the conditions for reception in your area.

Socket Y is intended for the connection of an external AM aerial.

Socket ⏚ is for earth connection.

Socket ⓬ is provided at the rear of the RPC 500 for connecting the special VHF aerial rotator accessory.

Loudspeakers
For best possible reproduction we suggest you use high quality high wattage loudspeakers with your RPC 500. The best results will be obtained with 4 Ω (min. 3.2 Ω) loudspeakers (loudspeakers of lower impedance should not be used). Loudspeakers with an impedance of up to 16 Ω may be used but the amount of power the amplifier can deliver will be limited.
Two pairs of connecting sockets are mounted on the rear of the RPC 500 (LS 1 and LS 2) – ⓭ and ⓮. It is possible to use both sets of loudspeakers simultaneously in separate rooms.
The RPC 500 will deliver its maximum power (2 x 50 W music power, 2 x 30 W sine) when the speaker sockets LS 1 or LS 2 are used separately.

When both LS 1 and LS 2 are used simultaneously the RPC 500 will deliver 4 x 30 W music power, 4 x 10 W sine.
It is important that the right-hand loudspeakers are connected to the respective socket R (right-hand channel), the same is valid for the left-hand channels (L).

Note
Loudspeaker extension cables can be obtained Grundig type 375 a (5 m long) or 376 a (10 m long).

Headphones
2 sockets ⓯ conforming to DIN 45 327 are provided on the left hand side of the case. Headphones are particularly suitable for the music lover who wishes to listen undisturbed. Headphones of 5 to 2000 Ω impedance may be used. We recommend the GRUNDIG headphones 216 or 223.

Loudspeaker/Headphone Switch
When the switch ⓰ on the left side of the case is turned, the position will be indicated by one of the four light emitting diode indicators ⓱.

LS 2 = loudspeaker set 2 and headphones
LS 1 + 2 = both sets of loudspeakers
LS 1 = loudspeaker set 1 only
KH ∩ = headphones only

Loudspeaker set 1 (LS 1) should be positioned in the same room as the RPC 500.

Mains On/Off Switch ❶
Press the button once to switch the unit on. The button will light up indicating the unit is switched on.

Selector Press Buttons ❷
By applying light pressure to the press buttons the following functions can be selected (the press button will light):

TB = Tape replay from an external tape recorder/cassette recorder (it is possible to record the signal using the built-in cassette recorder)
TA = Record player (it is possible to simultaneously record the gramophone record using the built-in cassette recorder or an external tape / cassette recorder)
CASS = Replay from built-in cassette recorder (it is possible to record the signal using an external tape/cassette recorder)
RF = Radio reception (it is possible to record the signal using both the internal cassette recorder and an external tape/cassette recorder)
MPX AUS = Mono operation (only applicable to VHF reception)

When the unit is switched on the RF function will light and programme 1 will automatically be selected (see section covering programme selection).

Stereo Radio Reception
The RPC 500 is suitable for reception of VHF stereo transmissions (using the pilot tone system often termed MPX-Multiplex). The built-in PLL decoder (phase lock loop decoder) will automatically switch to stereo operation when a stereo signal is received, indicator MPX ❸ will light.
If button ❸ has been touched (lamp on) the decoder will be switched permanently to mono.

Volume Control
The volume can be adjusted with control slider ❹.

Programme Press Buttons ⑨
The buttons can be programmed to store 10 different stations in the VHF, medium or longwave bands. The stored stations can be recalled instantly by lightly touching the required button. The waveband selected will be shown by the indicators ⑤. The MPX indicator ⑥ will show if a stereo station is being received.

If you switch to CASS, TB, or TA, the last programme to be received will be recalled immediately when you switch back to RF. If the MPX AUS (off) button was activated to override any stereo transmission it will be reset when the unit is switched back to RF operation.

The RPC 600 has elaborate electronic control systems for ease of operation. The unit is very sensitive and capable of long distance reception.

Station Programming
The tuning controls are mounted behind the programme buttons. The buttons are mounted on a flap which can be folded back after pushing the spring catch mounted on the lower edge upwards.

- Lightly press the RF button ②, the RF button will light.
- Apply light pressure to the required contact button (**a**), the indicator lamp above will light.
- Set the small lever (**b**) to the required waveband (U, M or L).
- Pull out the knurled tuning knob (**c**) as far as possible and tune in the required station. When tuning in VHF stations the following precautions should be observed: Switch off the AFC with the red button (**d**). If the MPX off button has been touched it should be touched once more to extinguish the indicator lamp. It will then be possible to see if the station tuned in is transmitting in stereo, indicator lamp ④ will light. When tuning refer to the frequency meter ⑧ which will display the frequency of the station being received, final tuning should be made by referring to the signal strength meter ⑦. Now push the knurled knob home.

When all the required stations have been stored the AFC should be switched on. The AFC will assure correct tuning when a station is recalled.
The small coloured indicators underneath the touch buttons show which waveband the stored station is in. Red = VHF, green = MW, yellow = LW. The colours correspond to the colours of the light diodes ⑤.

Automatic Frequency Control – VHF (AFC)
The AFC can be turned off by operating the small red button (**d**) in the centre behind the programme button flap. The indicator ④ shows when the AFC is switched on. The function of the AFC is to maintain precise tuning of a preset VHF station after it has been tuned.

If a distant station is to be tuned and there is a much stronger local station adjacent to it, the AFC should be turned off to avoid the receiver capturing the undesired stronger station. Remember that some transmissions are duplicated and the transmission having the greatest signal strength should be used. The signal strength will be indicated on the field strength meter ⑦.

Tone Filters ⑮
The elaborate range of tone filters are to compensate for widely varying programme sources and different listening conditions.

- Programme source: Greatly varying programme sources such as old and new records or amateur and professional tape recordings can be equalised by using the tone filters.
- Volume settings: The tone filters can be used to compensate for the apparent change in frequency response when the volume control is used at different settings. The tone filters can also be used to compensate for different listening conditions ie: when certain frequencies may be absorbed by soft furnishings or curtains.
- Loudspeakers: Large loudspeakers usually have a better bass response than small loudspeakers, but even small loudspeakers can be made to sound more realistic by using the tone filter controls.

Each of the four control sliders affect a carefully selected portion of the audio frequency spectrum.

40Hz slider control. For adjusting deep bass, especially useful on music.

250Hz slider control. For adjusting lower middle and bass. If the programme sounds bass heavy or the bass sounds generally thick. The control slider can be used to reduce the lower middle and bass content. If the programme sounds lacking in bass (has a thin sound) the control slider can be used to increase the lower middle and bass.

3000Hz slider control. For controlling the higher middle frequencies. Most of the lead instruments in an orchestra can be heard in the 3000Hz frequency band. The control slider should be used to correctly position the instruments. Too lower setting will make the instruments appear distant, too higher setting will bring the instruments forward and make the programme sound hard.

16000Hz slider control. For controlling the extreme high frequencies. If the programme sounds lifeless (eg: the sparkle is missing from a cymbal crash or voices sound dull) the control slider should be used to increase the 16000Hz region. If the level is increased too much the higher frequencies will sound piercing and shrill. When adjusting the above slider controls we recommend you start with them in the centre position to allow the maximum possible adjustment.

If when listening to a programme it is found that the sound is lacking in deep bass and extreme top, it is better to increase the slider controls (40Hz and 16000Hz) rather than decrease the slider controls (250Hz and 3000Hz) otherwise the amplifier may not be able to produce its maximum power output. If the output is lacking in middle frequencies (eg: solo artists or instruments appear distant) the middle controls should be increased. When the middle has been balanced you may find the extreme top sounds too shrill (possibly due to programme distortion). We recommend the 16000Hz control be reduced.

Aerial Rotator
The RPC 500 is fitted with a rear mounted socket ⓫ for connection to the "programmatic-rotor" aerial rotator manufactured by Stolle.
The position of the aerial rotator can be programmed when the VHF stations are being tuned.
When a station is recalled by touching one of the buttons ❾ the VHF dipole will automatically be steered towards the transmitter.

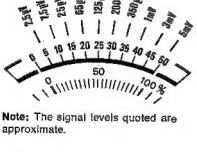
Note: No provision has been made for press buttons 9 and 10 to activate the aerial rotator and if any of the press buttons are switched to LW or MW operation the VHF aerial rotator will not function.

VHF Field Strength Meter
The field strength meter ❼ works only on VHF and is particularly useful when the RPC 500 is being used with the aerial rotator.

If more than one station can be received carrying the same transmission, use the field strength meter to select the strongest station. The field strength meter can also be used to determine whether the station being received is worth storing (very low level signals are prone to static noise and other forms of interference).

The RPC 500 is a very sensitive receiver and long distance reception of mono VHF transmissions should be possible but remember if a stereo transmission is to be received the signal strength must be about 10 times greater to provide acceptable results.

It is possible to receive stereo transmissions on the RPC 500 with an aerial voltage as low as 20µV. But for reliable stereo operation one should aim for a signal of at least 200µV.



Note: The signal levels quoted are approximate.

Low Pass Filter
If the lever switch ⓭ is moved to the left the filter is operative. With the filter switched on all frequencies above 7kHz are suppressed. The filter is particularly useful for removing high frequency hiss or distortion (noisy tapes or old gramophone records).

Linear/Contour Switch (loudness compensation)
The contour facility is to compensate for the change in frequency response of the human ear as the sound intensity is reduced. As the volume control is reduced through medium to low volume the bass and high frequencies are progressively boosted to alter the tonal balance.
If the lever switch ⓮ is moved to the linear position no treble or bass boost will take place as the volume is reduced. We recommend the switch ⓮ be used in the linear position when large loudspeakers (having superior bass response) are used and also when speech is being reproduced. For all other conditions we recommend the switch be left in the contour position.

Balance Slider Control
The relative output between left and right loudspeakers can be adjusted with the balance control ⓬. The control can be used to compensate for poorly positioned loudspeakers or unfavourable room conditions.

Record Player
The built-in record player is fitted with a magnetic cartridge wired internally to the amplifier. To replay a gramophone record the TA button must be pressed – button group ❷.

Please read the record player instruction book carefully.

The RPC 500 is permanently wired for stereo operation, but when a mono gramophone record is played it will automatically be reproduced in mono through both loudspeakers.

Cassette Recorder
The built-in cassette recorder has its own mains on/off switch. When listening to a gramophone record or a radio transmission and if you don't intend to record onto cassette, the cassette recorder should be switched off (the cassette recorder illumination will be extinguished).

If the cassette recorder mains switch is left in the on position the recorder will be switched off by the master mains switch ❶.

To replay a cassette the CASS button must be pressed – button group ❷. To record onto the cassette select the required programme source: RF = radio, TA = built-in record player, TB = external tape recorder, cassette recorder or record player.

When replaying a mono cassette it will automatically be heard from both speakers in mono.

TB Socket (Universal socket)
The TB socket ⓰ on the rear of the RPC 500 can be used to connect a tape recorder or a cassette recorder for both record and replay. Recordings can be made from the internal cassette recorder to an external tape / cassette recorder or vice versa both in stereo and mono.

For connection use the radio socket (or equivalent socket) on the external tape or cassette recorder.

The TB socket can also be used for connecting an external record player fitted with a ceramic or crystal cartridge (or a record player fitted with a magnetic cartridge and pre-amplifier).

The TB button must be pressed to replay any signal presented to the TB socket ⓰. As previously mentioned all mono signals available from stereo equipment will be replayed through both left and right hand channels, however, to ensure that signals from a mono tape or cassette recorder are replayed through both left and right hand channels we recommend the use of a Grundig 237 mono cable or a Grundig 294 adaptor.

Before connecting a tape recorder or cassette recorder to the TB socket ⓰ be sure to read the instruction book supplied with the product carefully.

Technical Specification
Radio Section (RF)

Waveband coverage:
VHF/FM 87.5 – 108 MHz
LW 146 – 350 kHz
MW 510 – 1620 kHz

Sensitivities:
VHF/FM: 1.4 µV in 300 Ω or 0.7 µV in 75 Ω and 15 kHz deviation for 26 dB noise.
AM: MW Band 8 . . . 12 µV
LW Band 13.6 . . . 22 µV

Noise + Signal / Noise ≙ 6 dB
(modulation depth ~ 30 %)

Aerial Sockets:
FM: VHF/FM dipole 300 Ω
AM: External Aerial and Earth

Intermediate Frequencies:
FM: 10.7 MHz; AM: 460 kHz

FM Limiting:
Limiting Point, (–1/–3 dB): 1.2/0.9 µV in 300 Ω

IF Bandwidth:
FM-IF: 180 kHz (approx)
AM-IF: 4.5 kHz (approx)
FM-demodulator: 900 kHz

IF-Noise:
FM: ≧ 66 dB
AM: ≧ 60 dB

AM Suppression:
≧ 60 dB at 1 kHz (measured with 22.5 kHz deviation and 30 % modulation at 1 mV in 300 Ω).

Image Rejection:
FM: ≧ 57 dB
AM: MW 48 . . . 59 dB
LW 59 . . . 66 dB

AFC Accuracy (VHF/FM):
Switchable, holding/capture range ± 400 kHz/ 260 kHz.

Capture Ratio:
≦ 1 dB for – 30 dB noise at 1 mV in 300 Ω and 40 kHz deviation.

FM Signal to Noise Ratio (Unweighted):
To DIN 45 405 in the range 31.5 Hz . . . 15 kHz measured with 40 kHz deviation at 30 Watts output.
Mono/Stereo: ≧ 65/60 dB
Mono/Stereo: ≧ 62/57 dB at 50 mW output

FM Signal to Noise Ratio (Weighted):
To DIN 45 405 in the range 31.5 Hz . . . 15 kHz at 40 kHz deviation and 30 Watts output:
Mono/Stereo: ≧ 66/60 dB
at 50 mW output:
Mono/Stereo: ≧ 62/56 dB

Frequency Response (VHF/FM):
Better than DIN 45 500 from aerial input to loudspeaker output:
40 – 6300 Hz ≦ ± 1.5 dB
6.3 – 16 kHz ≦ ± 2 dB

Stereo Pilot Leakage:
≧ 35 dB at 19 kHz
≧ 50 dB at 38 kHz

Distortion:
Mono/Stereo: ≦ 0.5 % at 1 kHz and 40 kHz deviation measured at 2 x 25 Watts in 4 Ω.

Stereo Decoder:
Integrated circuit PLL decoder with automatic indicator and RF level Mono/Stereo switching (Level set for 20 µV in 300 Ω).

Stereo Crosstalk:
1 mV at aerial and 47.5 kHz deviation: –
1 kHz – ≧ 40 dB
250 – 6300 Hz – ≧ 30 dB
6.3 – 10 kHz – ≧ 25 dB
Measured at selected points

Safety Circuits:
To all European norms and IEC Regulations, etc.

De-emphasis:
50 µ/secs (norm)

Audio Amplifier Section (AF)

Output Power:
measured to DIN 45 500 in 4 Ω.

Loudspeaker group 1 or 2:
100 W music power = 2 x 69 W
60 W nominal power = 2 x 30 W

Loudspeaker groups 1 and 2:
120 W music power = 4 x 30 W
40 W nominal power = 4 x 10 W

Distortion Factor:
≦ 0.2 % at 40 . . . 20 000 Hz and 2 x 25 W Sinus

Frequency Response:
TB: 20 . . . 20 000 Hz ± 1.5 dB
TA Magnetic: 40 - 20 000 Hz ± 2 dB

Power Bandwidth:
< 10 . . . > 80 000 Hz at 1 % distortion (to DIN 45 500)

Intermodulation:
≦ 0.3 % at full output, measured at 250 Hz and 8000 Hz with a ratio of 4 : 1 (to DIN 45 403)

Signal to Noise Ratio:
(to DIN 45 405) for 30 W/50 mW
TA: ≧ 88/59 dB (input 5 mV)
TB: ≧ 85/60 dB (input 500 mV)

Stereo Crosstalk:
≧ 40 dB in the range 40 . . . 20 000 Hz
≧ 55 dB at 1 kHz

Input Sensitivity and Impedance:
Sensitivity for 30 Watts output:
TB: 130 mV/≧ 0.5 MΩ
TA: 1.6 mV/47 kΩ
The TA input is frequency corrected to RIAA at 3180–318 and 75 µsecs

Input Overload Point:
TA: ≧ 42 mV
TB: ≧ 3.5 V

Volume Control Accuracy:
The accuracy of the volume control setting, per channel is 2 dB in the frequency range 20-20 000 Hz. With the loudness circuit in operation this figure might be slightly degraded.

Tone Controls:
Setting ranges:

40 Hz	± 15 dB
250 Hz	± 10 dB
3 kHz	± 10 dB
16 kHz	± 13.5 dB

Stereo Balance Range:
Setting range – 12 dB

Noise Filter:
Roll off, – 3 dB at 7 kHz.

Output Facilities:
a) Four loudspeaker sockets to DIN 41 529 (Impedance 4 Ω. Minimum impedance 3.2 Ω) for stereo in two separate rooms. It is permissible to connect loudspeakers with an impedance of up to 16 Ω provided that the associated loss in output power can be tolerated. The amplifier is fitted with an automatic short circuit protection device which comes into operation when the output load falls below 2 Ω.
b) 2 sockets to DIN 45 327 for connecting 2 sets of stereo headphones. Output impedance in the range 8 to 2000 Ω.

Damping Factor:
The internal impedance of the amplifier is 0.17 Ω and when connected to a 4 Ω load this will give a damping factor of 23.5 (27 dB). This damping factor is improved when using loudspeakers of a higher impedance.

General:

Mains supply: 110, 130, 220, 240 V AC 50/60 Hz

Power consumption: 185 Watts + 1.2 W (record player) + 12 W (cassette recorder)
At TA without signal: 22 W + 1.2 W (record player) + 12 W (cassette recorder).

Fuses (Mains)
110/130 V AC: T 2 A (SI 1)
220/240 V AC: T 1 A (SI 1)

(Secondary)
2 x T 6.3 A
T 200 mA
T 400 mA
T 50 mA
T 1 A
(T = surge resisting)

Overload Protection
The circuit has been designed so that it will sense open and short circuit loading conditions. It will also sense over capacitive or over inductive loads and the automatic overload protection circuit will then operate. Thermal protection devices have also been fitted to the mains input transformer and onto the heatsinks of the output transistors. These transistors are therefore protected against destruction by overload and high operating temperatures. Should a fault condition occur these overload protection circuits will reset themselves when the fault has been cleared.

The right is reserved to alter specification or operation details without prior notice.